

### Abstract of the Disclosure

A wave detecting section of a receiver has a first wavelet transformer involving a plurality of wavelet filters orthogonal to each other for performing a wavelet transform on received waveform data, a Hilbert transformer for performing a Hilbert transform on the received waveform data, a second wavelet transformer having the same configuration as that of the first wavelet transformer for performing a wavelet transform on outputs from the Hilbert transformer, a code converter for inverting the codes of outputs in odd-numbered places among outputs from the second wavelet transformer, a level converter for correcting fluctuations of outputs from the code converter attributable to a ripple of the Hilbert transformer, and a complex data generator for generating complex data, by defining outputs of the first wavelet transformer as in-phase components of the complex information and outputs from the level converter as orthogonal components of the complex information.